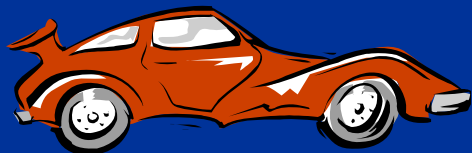
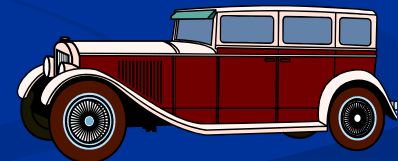


# Everything I Ever Needed to Know About Project Management

## I Learned in Drivers Ed



By Jeffrey A Robinson, Ph.D.



# Project Management

- A Misunderstood Discipline
- In many ways more complex than it seems
- An odd mix of time proven techniques and common sense
- It's easy to identify aspects of Bad Projects
- Yet it's more difficult to define characteristics of Good Projects (besides their outcome)

# Project Management

Teaching and Explaining is often a Search  
of the best analogy (or metaphor)

For today we will examine

HOW PROJECTS ARE LIKE CARS

# How Projects Are Like Automobiles

- Systems Approach
- Planning
- Tracking and Control
- Process Driven Systems

# How Projects Are Like Automobiles

## ■ Systems

### ■ Elements of a System

- Input
- Output
- Processing
- Control

**What are these in a Car?**

**What are these in a Project?**

# How Projects Are Like Automobiles

## ■ Systems

- Dynamic Systems are Unstable
  - Good Systems go bad
  - Bad systems get worse
  - Error Accumulate (Entropy)

**Cars lose control and crash. Projects go bad too and lose control.**

**So what keeps projects on course and in control?**

# How Projects Are Like Automobiles

## ■ Planning

### ■ Critical Prerequisite Step

- Define Goals (Destination)
- Basic Strategy (Train, plane, truck, bus, car, go-cart)
- Staffing/Resources (Type of car, number of passengers)
- Budget/Cost (gas money, food, toll money)
- Risk Management (spare tires, jack, flares, first aid kit, etc)
- Other planning materials (maps, schedule, etc.)

**So how critical is planning, really?**

# How Projects Are Like Automobiles

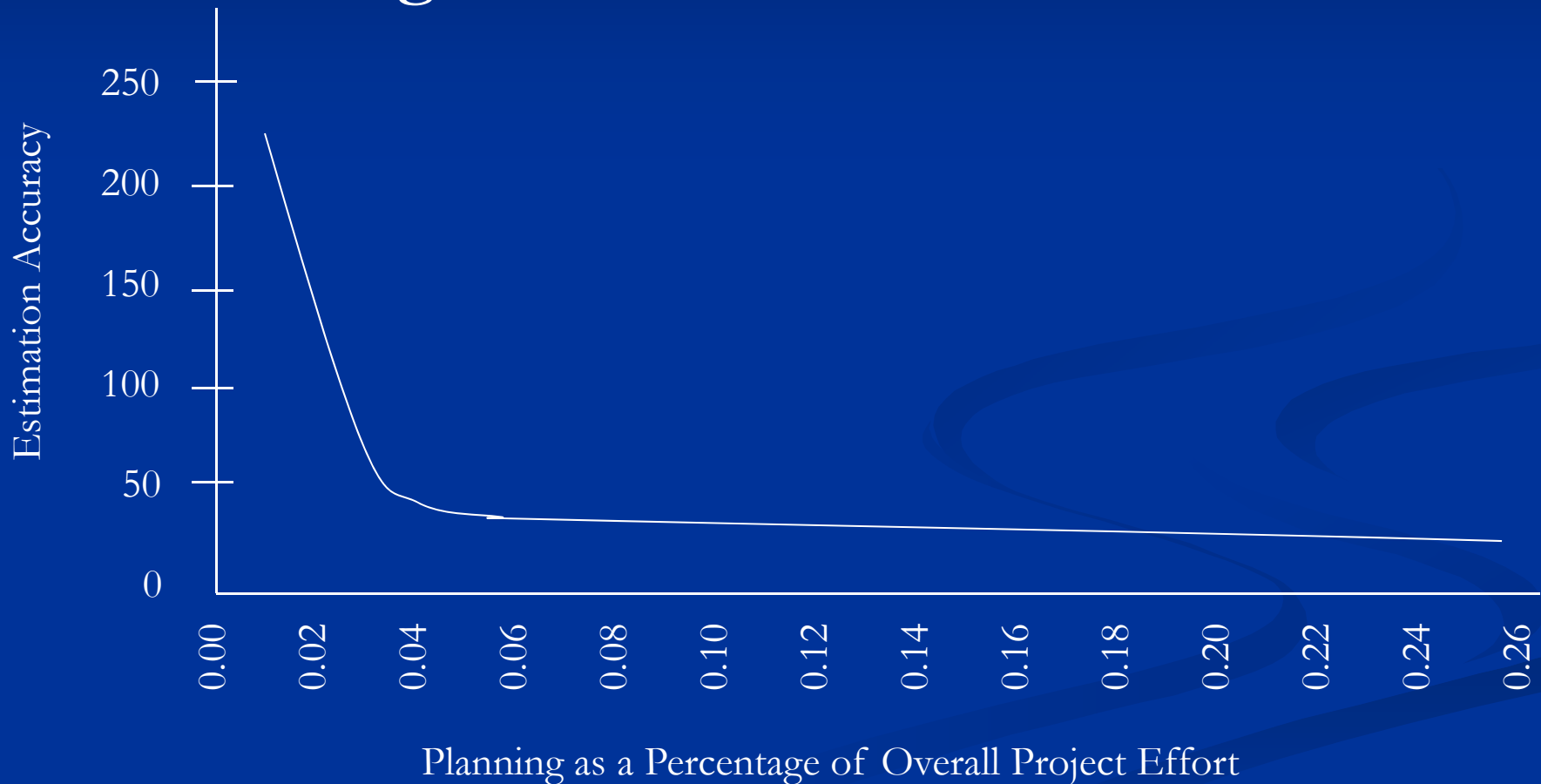
## ■ Planning

- Some critics go so far as to attribute virtually all problems with projects to some error in Planning
- Unfortunately this can lead to a tendency to spend too much time in planning, a phenomenon known as the **Paralysis of Analysis**



# How Projects Are Like Automobiles

## ■ Planning



(Critical Chain Project Management, Leach p 20)

# How Projects Are Like Automobiles

## ■ Planning

An Example of non-linear  
System

While some is good, more is not  
necessarily better

What are the consequences of too little planning?

What are the consequences of too much  
planning?

# How Projects Are Like Automobiles

## ■ Planning

An anecdote about planning a trip in a car

While planning is good, all the planning in the world won't keep you on the road

**PLANNING IS  
NECESSARY BUT NOT SUFFICIENT**

# How Projects Are Like Automobiles

## ■ Planning

So if planning doesn't keep you on the road...what does?

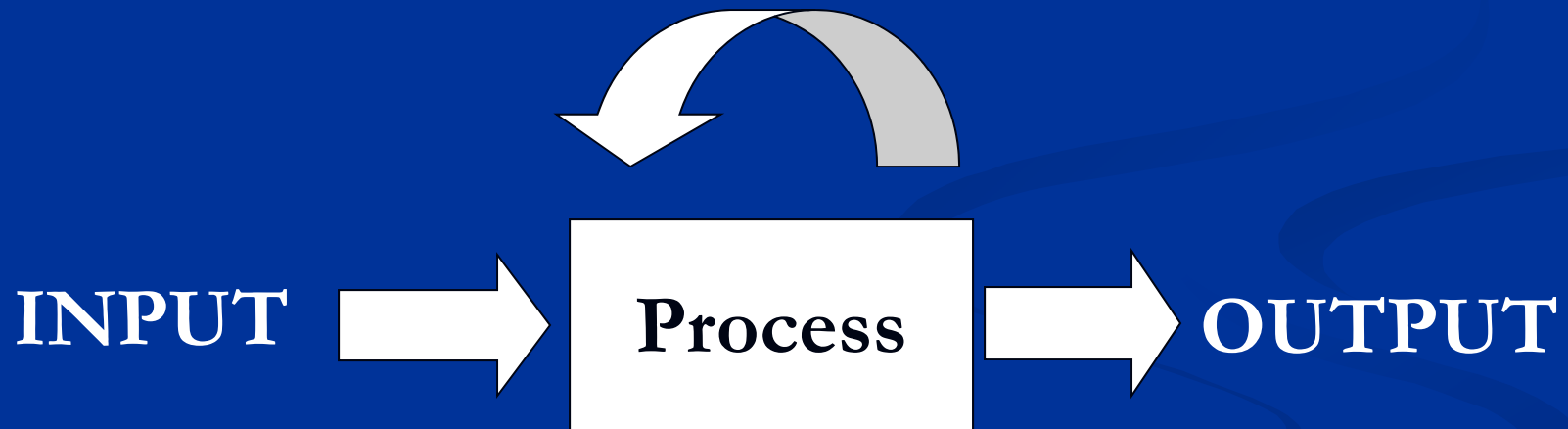
**Feedback - The Detection and  
Correction of Error**

# How Projects Are Like Automobiles

Planning

Tracking & Control

**CONTROL**  
(feedback)



Back to the Systems model again

# How Projects Are Like Automobiles

## ■ Tracking and Control

While many parts of a car are involved in the steering, direction and control of the car, **which elements of the system is the most critical?**  
(Steering column, brakes, instrumentation, tires?)

### The Driver

Note: Any system that depends on people is by definition an unreliable system (cars or projects)

# How Projects Are Like Automobiles

## ■ Tracking and Control

What are other important factors in maintaining the control of a car?

Speed

Weather Conditions

Other cars on the road

Conduct of passengers in the car

Condition of the car

# How Projects Are Like Automobiles

## ■ Tracking and Control

Tracking Granularity and Resolution  
(Milestones or inch-pebbles?)

Uncertainty is directly proportional to the units of measure (measurement theory)

Accuracy based on units of time, distance, effort, etc.)

Tracking resolution is a function of perceived risk - a barometer of how good management feels about a project



# How Projects Are Like Automobiles

## ■ Tracking and Control

Audits and Quality Assurance

What would the impact be of increasing the frequency of truck weigh stations, agricultural inspection stations, and sobriety checkpoints?

Value-added versus non-value added activities

# How Projects Are Like Automobiles

## ■ Process Driven Systems

Another aspect of Driving (Project Management) involves the processes (procedures/methods) use by our system.

There ARE different processes

Starting car, stopping and starting, driving, parking, repairing

# How Projects Are Like Automobiles

## ■ Process Driven Systems

What are some of the Processes in Project Management?

### Per the PMBOK

Project Scope Management, Project Time Management, Project Cost Management, Project Quality Management, Project Human Resource Management, Project Communications Management, Project Risk Management, Project Procurement Management

# How Projects Are Like Automobiles

## ■ Process Driven Systems

There are also overall methodologies associated with the way by which we negotiate our movement along the road. (Rules of the Road)

Project Lifecycles, Project types

Some are very different paradigms - e.g. driving rules in United States, Australia, India

**How do these paradigms differ?**

# How Projects Are Like Automobiles

## ■ Process Driven Systems

What are some of the benefits of having formally defined processes?

**In a Project?**

**In an Automobile?**

**Speed, Predictability, Number of Accidents**

# How Projects Are Like Automobiles

## ■ Process Driven Systems

If we deviate from the automobile metaphor for a second, consider a different mode of transportation....aircraft.

**Why use checklists? Do you REALLY need them to fly? What value do they bring?**

**Risk reduction, speed, ease**

**15 Minute Break**

# Extending the Analogy

## ■ Risk Management

Automobiles - Seat belts, Airbags

What types of risks are addressed in Projects?

Just as seat belts don't do any good if they aren't used, identifying risks is of little value if they do not result in real action.

(Difference between judgment and decision)



# Extending the Analogy

## ■ Communication

Automobiles - Turn signals, horn, backup lights (and audible alarms), brake lights, etc.

What types of communications do we employ in projects to external stakeholders?

What types of communications do we employ in projects to internal stakeholders?

# Extending the Analogy

## ■ Role Definition

Backseat Drivers.

(Pilot, co-pilot, navigator, etc.) Each has a defined role...no question about who was supposed to do what.

# Extending the Analogy

## ■ Solving Project Problems

Two types of errors

Type 1 - Solving the wrong problem

Type 2 - Solving the problem wrong

**Which is worse?**

Trick question they are equally bad

# Extending the Analogy

## ■ Solving Project Problems

Example:

A car (project) is moving too slow. It takes more than an hour to go ten mile every morning in rush hour traffic.

The problem definition is "Speed is too slow"

Is this a good problem statement?

# Extending the Analogy

## ■ Solving Project Problems

If you accept this definition a possible solution is to buy a faster car.

So, would buying a \$150,000 Porsche that can do 180 MPH improve the commute each morning?

**No...the way the problem was phrased led to the wrong solution.**

# Extending the Analogy

## ■ Process Improvement

There are two types of change, Planned & Unplanned.

There are two types of change,

Incremental (continuous improvement and  
Paradigm shifts (quantum leaps)

(Local versus global peaks)

# Extending the Analogy

## ■ Process Improvement

"The talk you hear...about adapting to change is not only stupid, it's...dangerous. The only way you can manage change is to create it. By the time you catch up to change, the competition is ahead of you."

-- Peter Drucker, Professor of Social Science and Management,  
Claremont Graduate University ( Nov. 2000 Issue )

"We tend to do the same things we did yesterday. To improve tomorrow, we need to change today."

# Extending the Analogy

- **If We Drove Cars the Way We Manage Projects**
  - Going off the road - (Denial)
  - Inappropriate behaviors (overreacting)
  - Staring in the rearview mirror (focusing on lagging metrics)



# Extending the Analogy

- **If We Drove Cars the Way We Manage Projects**
  - Enforcing the project plan
  - Minimize the number of changes (avoiding re-planning)
  - Over-steering (time delays - Logic of Failure)

# Extending the Analogy

- **If We Drove Cars the Way We Manage Projects**
  - Overcoming Habits (doing the wrong things because it's right most of the time)
  - Failing to learn from our mistakes
  - Reacting to change (reaction time isn't sufficient...you have to stay ahead of the car)

# Extending the Analogy

## ■ A Maintenance Exercise

Break into groups and brainstorm a few items that require maintenance in a car

We will take these and examine how they relate to Project Management

**15 Minute Break**

# Maintenance

Gasolines

Battery

Steering, transmission, fluids

Tires (pressure/tread)

Wipers/window

Registration/License

Lights

A/C

Brakes

Paint

Cleanliness

Belts/hoses

Insurance

Train

# Additional Topics

## ■ Experiential Learning

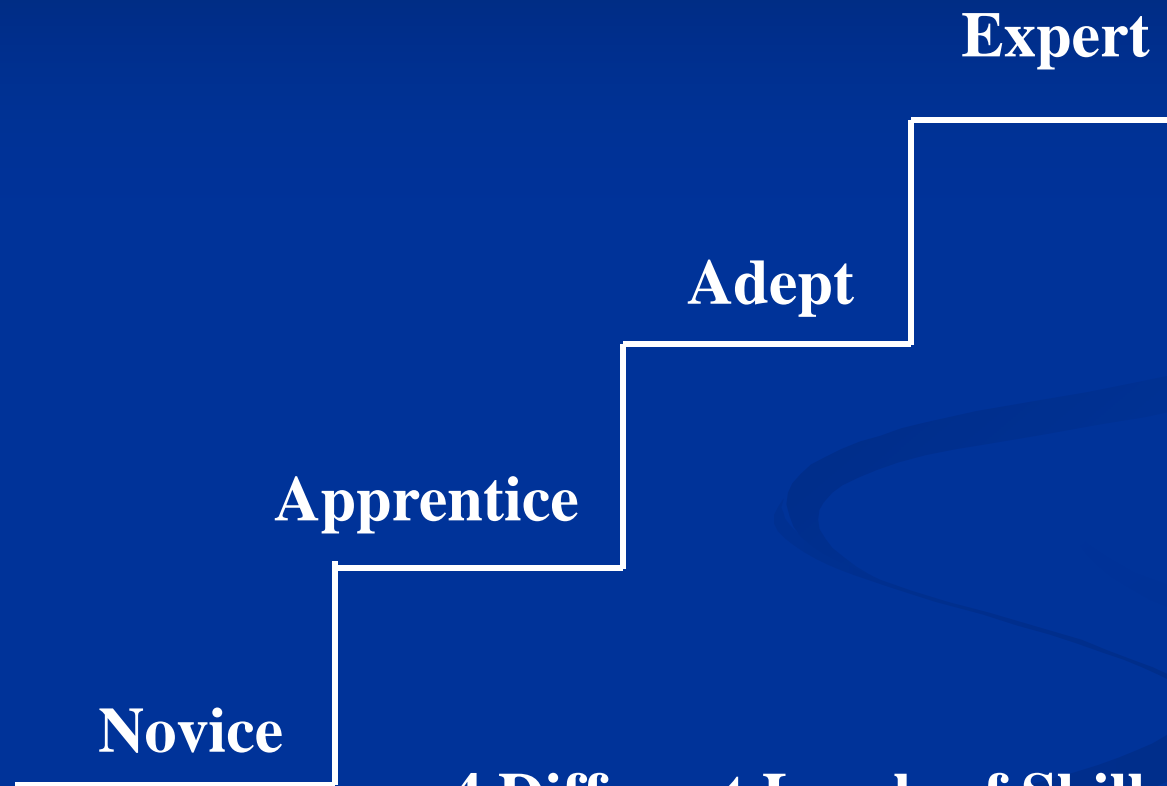
(Heuristics)

Things that can be learned but not taught

There is a difference between knowing and learning.

What you know is sometimes difficult to convey to others (i.e. to teach)

# A Model of Learning Theory



## 4 Different Levels of Skill Acquisition

Heuristics – Experiential Learning  
Things that can be learned but not taught

# Additional Topics

## ■ Customer Satisfaction

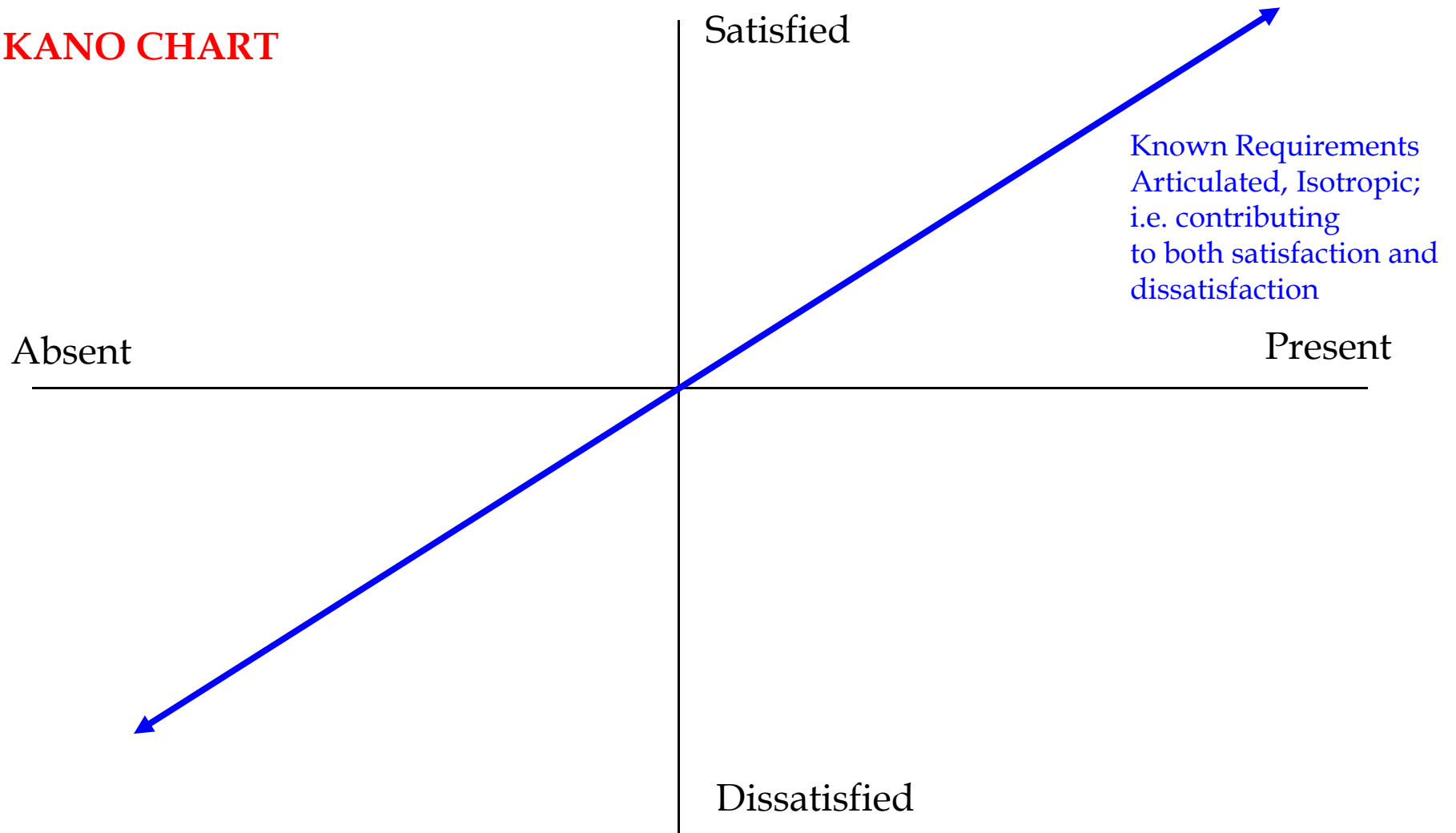
Things they might NOT have taught you about  
Buying a car (of about Selling cars)

What do you think some of the factors are  
that make customers satisfied or dissatisfied  
about cars (or projects)?



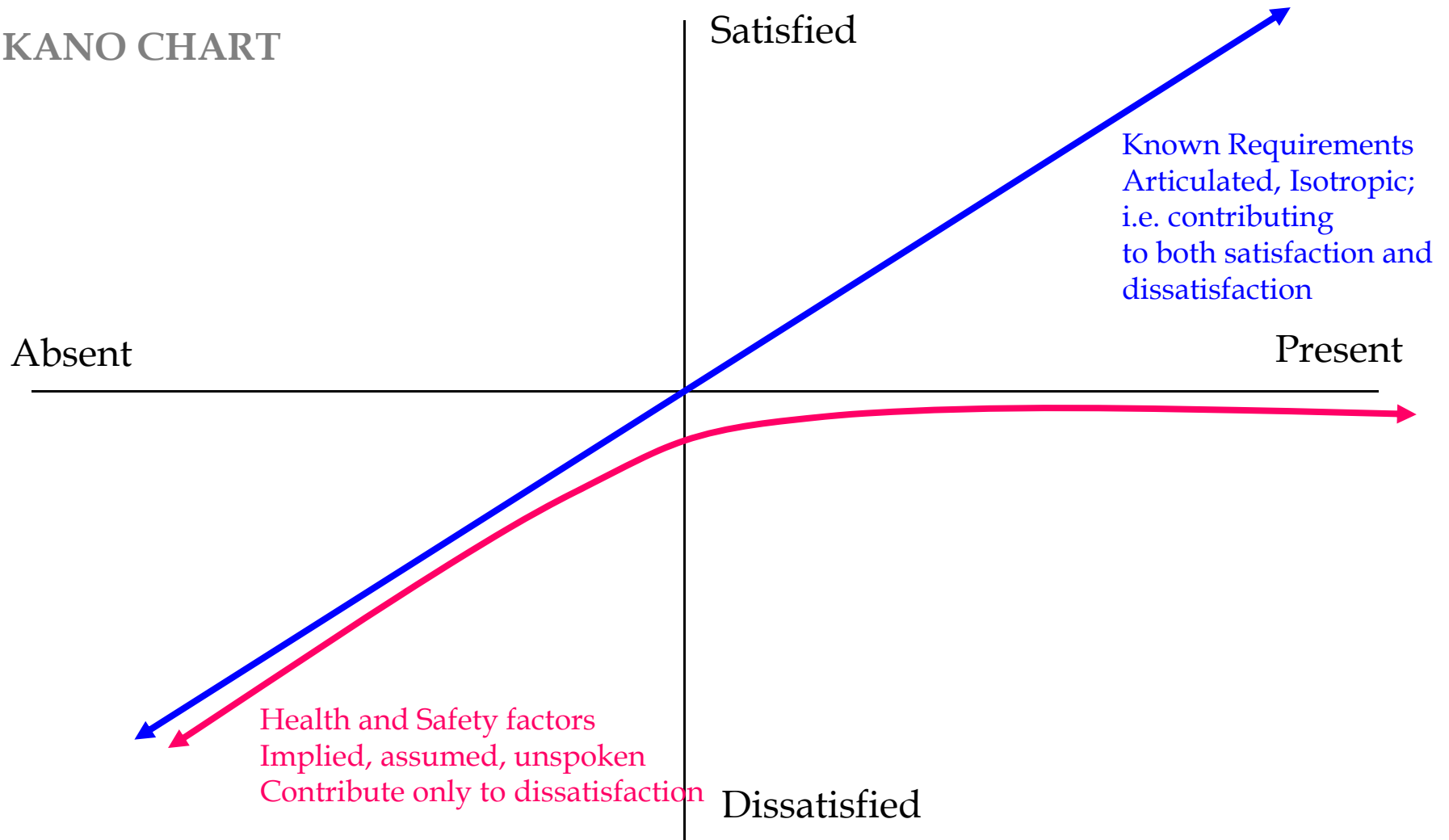
# Real and Implied Requirements

## KANO CHART



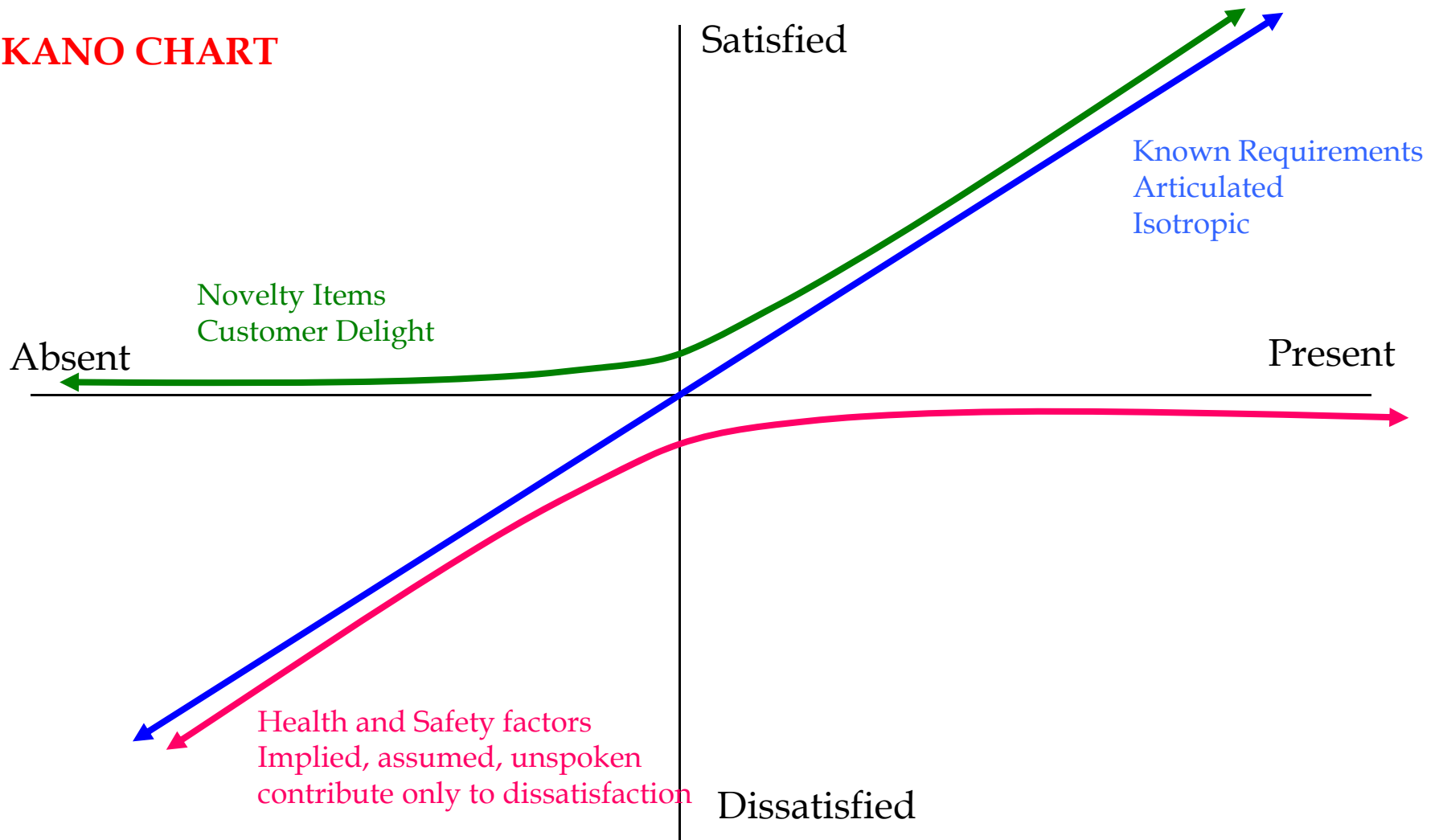
# Real and Implied Requirements

KANO CHART



# Real and Implied Requirements

## KANO CHART



# Real and Implied Requirements

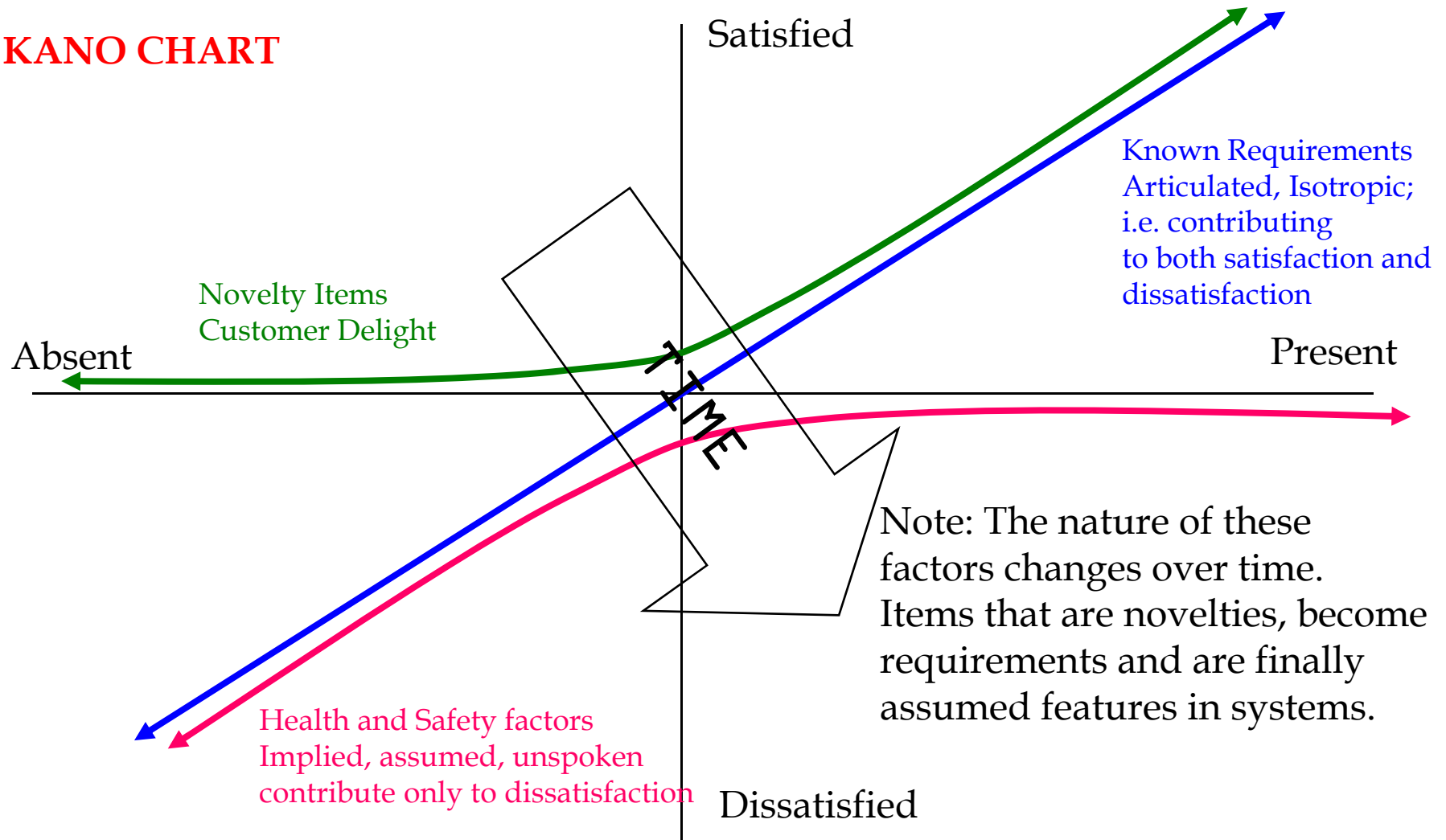
## KANO CHART

**There are thus different types of factors that affect customer satisfaction**

1. Known, articulated, isotropic requirements that contribute both to satisfaction and dissatisfaction depending upon whether a factor is present or absent.
2. Health and safety factors that contribute only to dissatisfaction if these factors are absent. (If they are present they do not contribute to satisfaction; they are not noticed.) Anisotropic factors
3. Novelty items that contribute only to satisfaction if present. (If absent, they do not cause dissatisfaction.) Anisotropic factors

# Real and Implied Requirements

## KANO CHART



# Additional Topics

## ■ Customer Satisfaction

Exercise:

- Break into groups
- Pick a project
- List project requirements in each category  
(explicit and implied)
- Think about what you can change  
requirements of projects to maximize  
customer satisfaction?

# Additional Topics

- **Wrap up**

So what are some of the lessons that we got back in Drivers Ed that we can use in Project Management?

# Wrap Up

**Keep your eyes on the road and your hands on the wheel**

**Don't Drive too fast (speed kills)**

**Signal your intentions (be predictable)**

**Drive Defensively (try to anticipate problems)**

**Wear your seatbelt (manage risks)**

**Be courteous**

**Obey the rules of the road**

**Know how your car works (you never know what you need to know)**



# Wrap Up

**Plan your trips (have a destination in mind, or you will waste a lot of gas and probably end up someplace you really don't want to be)**

**Keep up maintenance (or it will cost you more in the long run)**

**Don't get distracted (keep your attention in front of the car; don't stare in the rearview mirror, the important traffic is in front of you)**

**Don't think that an expensive car can't get lost or get in an accident**

**Okay...so I am wrong!**

**All right, so I have abused my poetic license!**

**What are some of the significant ways that  
Projects Management is NOT like a car?**

Thanks

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